

WHAT IS CLAIMED IS:

1. A semiconductor device for controlling electricity comprising:
  - (a) a metal base plate; and
  - (b) at least one insulating substrate including
    - 5 (1) an insulator plate,
    - (2) a back-side pattern on a back face of said insulator plate, said back-side pattern being bonded to said metal base plate and
    - (3) two circuit patterns being located on a front face of said insulator plate and above said back-side pattern, each of said circuit patterns including a
    - 10 switching element for controlling electricity made of semiconductor, a free-wheel diode paired with said switching element, and an electrode area;
- wherein each of said circuit patterns is of a shape of a figure "L" and extending along two sides of said insulator plate that are continued to and lie perpendicular to each other, and said two circuit patterns are arranged at
  - 15 opposed corners of said insulator plate in a centrosymmetrical relation to each other, and wherein said switching element is sandwiched between said free-wheel diode and said electrode area in each of said circuit patterns.
2. The semiconductor device according to claim 1, wherein an auxiliary electrode is bonded to said electrode area.
- 20 3. The semiconductor device according to claim 2, wherein said two switching elements and said two free-wheel diodes are arranged in a checker pattern and sandwiched by said two auxiliary electrodes placed along opposite sides of said insulator plate.
4. The semiconductor device according to claim 1, wherein said
  - 25 insulator plate is made of ceramics; said back-side pattern and said circuit patterns are made of copper or aluminum; said metal base plate is made of copper or aluminum; and said back-side pattern is bonded to said metal base plate by means of solder.

5.               The semiconductor device according to claim 1, wherein said switching element is of a rectangle shape having sides of a length greater than 14 mm and is capable of being received in an area of 25 mm radius on a front face of said insulating substrate.
- 5   6.               The semiconductor device according to claim 1, wherein a temperature sensor is placed on said switching device at or near a corner of said back-side pattern.